

Work Assignment Form. (WebForms v1.0)

Work Assignment SOW

Work Assignment Title: USEPA Megacities Partnership – Santiago, Chile

Contractor: Industrial Economics, Inc. **Contract No.:** EP-D-14-031, Option 3

Work Assignment Number:

Estimated Period of Performance: October 1, 2017 to September 30, 2018

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I. Background

Urban environments are where people and pollution come together. These places require a concerted approach to mitigate exposure and health impacts. Some of the most challenging, and rapidly growing, urban areas are in developing countries where data, resources and capacity are limited, but health impacts of air pollution are significant. The goal of the project is to demonstrate the ability to assess air quality and implement air quality management programs in representative developing cities – Accra, Ghana and Santiago, Chile are the first two sites – and to do so in ways that simultaneously achieve other environmental benefits.

Work to develop air quality-climate management plans in Santiago, Chile was initiated under Contract EP-D-14-032. Building on the success of this effort is the intention to bring lessons learned and model planning to other Latin American cities, targeted by the availability of country level interest, capacity, and potential for partnering with other donor organizations and efforts. This will be accomplished using innovative tools and techniques based on those that have proven most effective for U.S. cities and states, and

which can be adapted for use in a much different policy and technical context. Building on previous work, the Santiago Megacity Partnership will also work to build a regional community of experts and support those environmental professionals who are engaged where climate and clean air come together – improving air quality while also achieving benefits for climate.

II. Purpose

The purpose of this work assignment is to complete air quality-climate management planning in the Santiago, Chile, and begin scale-up of activities in Latin America beyond Santiago.

III. Tasks and Deliverables:

The Work Assignment Contracting Officer Representative (WA COR) will review all deliverables in draft form and provide revisions or comments to the Contractor. The Contractor shall incorporate the comments as specified by WA COR. Final deliverable shall be in Microsoft Word and/or other appropriate electronic format requested for the deliverable.

Contractor personnel shall at all times identify themselves as Contractor employees and shall not present themselves as EPA employees. Furthermore, they shall not represent the views of the U.S. Government, EPA, or its employees. In addition, the Contractor shall not engage in inherently governmental activities, including but not limited to actual determination of EPA policy and preparation of documents on EPA letterhead.

The Contractor shall not duplicate any work performed previously.

Task 1 - Prepare Workplan

The contractor shall prepare a Work Plan within 15 calendar days of receipt of a work assignment signed by the Contracting Officer (CO). The Work Plan shall outline, describe and include the technical approach, resources, timeline and due dates for deliverables, and a detailed cost estimate by task and a staffing plan.

The WA COR, CL COR and the CO will review the Work Plan. However, only the CO can approve/disapprove, suggest revisions, or change the Work Plan. Official revisions will be given to the contractor by the CO. The contractor shall prepare a revised Work Plan incorporating the CO's comments, if required.

1a. Workplan within 15 calendar days of receipt of work assignment.

1b. Revised workplan within 15 calendar days of receipt of comments from the Contracting Officer, if required.

Task 2 – Complete Air Quality Management Plans [Contract Ref. – Work Areas (a) and (e)]

The Contractor shall finalize any outstanding work begun but not completed under Contract EP-D-14-032 to assist partners in Santiago, Chile to prepare a model integrated air quality management plan (AQMP), including the results of the retrospective benefits cost analysis and the value of information analysis.

The Contractor shall assure that the plan includes the following elements:

- Assess the current status of air pollution in the target cities. The Contractor shall provide technical guidance to technical staff in Santiago (e.g., environmental quality assessment methods, technology for monitoring and analysis of aerosols, pollutant speciation, and photochemical reaction) to compile and analyze recent PM_{2.5} ambient monitoring data, and any data on the composition of PM_{2.5} concentrations (e.g., sulfate, nitrate, organic carbon, elemental carbon, and other direct PM_{2.5}). Analyses shall be presented in terms of annual average and 24-hour PM_{2.5} averages. In the absence of any existing reports, Contractor shall work with the appropriate local, regional, or national officials to estimate contributions to PM_{2.5} ambient concentrations from sources within and near to the target cities. These estimates can be developed using air quality modeling or other techniques, including existing materials in the Long-range Energy Alternatives Planning-Integrated Benefits Calculator (LEAP-IBC) tool.
- Develop current (“baseline”) and projected (“future year”) emissions inventories. The Contractor shall provide technical guidance on compiling emissions inventories (including use of emissions factors, relevant models, and readily available inventory platforms) for the preparation of emissions inventories. Technical staff from the target cities will be responsible for developing the emissions inventories and updating LEAP-IBC to include that data. The emissions inventory shall include the key industries and sectors contributing to air pollution in the target cities and key pollutants (e.g. PM_{2.5}, including black carbon, SO₂, NO_x, VOC and ammonia as well as CO₂.) The baseline inventory shall include the most recent years available and could be drawn from existing local or regional inventories, if available. The future year inventory shall be a target year determined by the appropriate officials based on expected implementation of the air quality management plan and estimate emissions changes due to 1) reductions due to ongoing and existing regulations for the stationary, mobile and area sources in the target cities, projected growth in emissions from existing and new sources, and reduction in emissions due to projected shutdown of existing sources. (Note: the baseline and future year inventories are necessary to conduct air quality, cost-benefit, and other analysis needed for the air quality management plan.) The Contractor shall also provide guidance on maintaining, managing and regularly updating the emission inventory if procedures do not already exist.
- Develop control strategy. Based on the identification of key source sectors, the Contractor shall identify the pollution abatement technologies and approaches to reduce emissions contributing to PM_{2.5} and other key air pollutant concentrations. Information on pollution controls can include capital costs of control technologies, operation and maintenance costs, time needed for installation, and overall cost per ton of pollutant reduced. The Contractor shall recommend air

pollution prevention and controls chosen from the available measures, along with estimates of the total abatement of key pollutants after implementing the recommended measures. This recommendation must also identify the geographic region for implementation, outline the recommended steps (i.e., policies, regulations, guidance, etc.) for putting these measures in place, potential avenues for financing the recommended policies and programs, and include procedures for tracking progress and ensuring compliance with the measures and plan.

Deliverables

2a. AQMP for Santiago

Task 3 - Assessment of Benefits of Implementing Draft Air Quality Management Plan [Contract Ref. – Work Area (a)]

If not completed under Contract EP-D-14-032, the Contractor shall conduct analysis to define the expected level of air pollutant, toxics and GHG emission reductions and air quality improvement that could be achieved with implementation of specified control strategy options on key source sectors. This analysis shall evaluate potential air quality improvements from source emission reductions within and from outside Santiago. Using this information, the Contractor shall guide technical staff in Santiago in assessing the costs and benefits of achieving the plan objectives (versus a no plan/control scenario) using the BenMAP-CE tool (for health impacts assessment and valuation) or LEAP-IBC benefit calculator and available cost models (for control cost estimation).

The Contractor shall work with in-country staff to develop an appropriate communication plan with supporting materials regarding the results of this assessment, as well as relevant requirements (human and financial resources, technology costs, etc.) to implement the AQMP strategies, to key in-country decision makers.

Deliverables

3a. Benefit Assessment Completed for Santiago

3b. Communication Plan and any Relevant Supplemental Materials for Santiago

Task 4 – Implementation Support for Selected AQPM Measures in Santiago [Contract Ref. – Work Areas (c) and (d)]

The AQMP completed in Task 2 will identify key mitigation measures to be implemented in Santiago. The Contractor shall develop an implementation workplan for the AQMP and provide technical support to the relevant local officials by assisting with technical analysis needed to enable application for funding to potential donors, the Climate and Clean Air Coalition Finance Initiative and the Green Climate Fund. In addition, the Contractor shall provide assistance to USEPA and Chilean government in identifying potential implementing partners, including consultants or non-governmental organizations, to support implementation of the AQMP.

Deliverables

4a. AQMP Implementation Work Plan for Santiago

Task 5 – Scale-up in Latin America [Contract Ref. – Work Area (f)]

After the Santiago AQMP is finalized and implementation efforts of the AQMP get underway, planning will begin to leverage this success to scale up action in other cities in Chile and in Latin America based on the successful model for coordination between intergovernmental organizations, nongovernmental organizations and other donors developed under Megacity Partnership.

Once the air quality management plan for Santiago is completed, the Contractor shall organize a final dissemination workshop. This workshop is intended to present the air quality management plan, as well as the documented model for action for other Latin American cities. The audience for this workshop will consist of local, regional, and national officials, as well as identified participants from outside Chile, with a priority given to current Climate and Clean Air Coalition members. Partners in Santiago will be requested to provide free or low cost venue support, and the contractor shall provide logistical support for any low cost options, including room and equipment rental.

This workshop shall include a detailed presentation of the final developments of the air quality management plan, results of the assessments, including cost-benefits assessments, and a detailed presentation of the recommended steps for implementing the AQMP in Santiago. In addition, EPA experts will participate in the final workshop to present relevant U.S. air quality management programs and policy information.

Following the workshop, the Contractor shall accompany the WAM on a scoping mission to up to two cities in the Latin American region. The Contractor shall also attend scoping meetings with relevant partners, stakeholder and government agencies, and develop a summary report of up to two additional Latin American cities. The summary report shall include preliminary information derived from those meetings including current air quality conditions in the country, region, and city; any relevant data gaps and resource and capacity needs; and any climate or energy projects, and activities that would be expected to impact air quality.

Deliverables

5a. AQMP Workshop

5b. Summary Report of Latin American Scoping Mission

IV. SCHEDULE FOR DELIVERABLES

Upon receipt of work assignment, the contractor shall provide the following specific deliverables to the EPA WA-COR:

| TASK | DELIVERABLE | FORM AND QUANTITY | SCHEDULE |
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| TASK | DELIVERABLE | FORM AND QUANTITY | SCHEDULE |
|----------------|---|--------------------------|---|
| Task 1: | 1a. Work Plan | Electronic document | Within 15 days of work assignment receipt. |
| | 1b. Revised Work Plan, if necessary | Electronic document | Within 15 days of receiving comments from CO. |
| Task 2 | 2a. AQMP for Santiago | Electronic documents | Determined in consultation with WA COR and Country Partners |
| Task 3 | 3a. Benefit Assessment Completed | Electronic documents | Determined in consultation with WA COR and country partners |
| | 3b. Communication Plan and any Relevant Supplemental Materials | Electronic documents | Determined in consultation with WA COR and country partners |
| Task 4 | 4a. AQMP Implementation Work Plan | Electronic documents | Determined in consultation with WA COR and country partners |
| Task 5 | 5a. AQMP Workshop | Workshop delivered | Determined in consultation with WA COR and country partners |
| | 5b. Summary Report of Latin American Scoping Mission | Electronic documents | Determined in consultation with WA COR and country partners |